

REMARKS

Reconsideration is requested.

Claims 17 and 22 have been canceled, without prejudice. Claims 6, 7 and 24-26 have been withdrawn from consideration. Claims 27 and 28 have been added and find support, for example, in ¶¶[00319], [00326], [00327] and [00335] of the specification. The new claims are believed to read on the elected subject matter. Support for the amendments to claim 1 may be found, for example, in ¶¶[00205] and [00206] of the specification. No new matter has been added. Claims 1-16, 18-21 and 23-28 are pending.

The Section 102 rejection of claims 1-5, 8-18 and 22 and 23 over WO 01/07568 "as evidenced by" Carnac (1998, Mol. Biol. Cell., 9:1891-1902), is traversed. Reconsideration and withdrawal of the rejection are requested in view of the above and the following distinguishing comments.

As pointed out by the Examiner, WO 01/07568 teaches a method of preparing transplantable skeletal myoblast cells and fibroblast cells cultured on a surface coated with Poly-Lysine and laminin (page 2, lines 18-24). See page 3 of the Office Action dated July 14, 2009. The technique disclosed by WO 01/07568 is "cell implantation" referred to in paragraph [0007] of the specification of the present application. However, this technique has at least the following drawbacks: (1) damage and loss of implantation cells; (2) tissue injury of the recipient heart during implantation; (3) tissue supply efficiency to the recipient heart; (4) occurrence of arrhythmia; and (5) difficulty in treating the entirety of the infarcted site.

The present inventors made extensive studies and developments to solve the foregoing problems and have succeeded in solving them. The present invention provides a three-dimensional structure applicable to heart comprising a cell sheet which can be produced by culture and which structure can be used in actual transplantation operations. Thus, the present invention provides a novel therapy instead of cell therapy. See for example, paragraph [0010] of the specification.

Carnac et al. fails to provide evidence of a contrary interpretation of the cited art as the secondary reference only teaches that RhoA GTPase and serum response factor control selectively the expression of MyoD without affecting Myf5 in mouse myoblasts. Carnac et al. do not disclose a three-dimensional structure applicable to heart, comprising a cell derived from a part other than myocardium of an adult, which comprises a cell sheet having biological connection without scaffold.

Neither WO 01/07568 nor WO 01/07568 "as evidenced by" Carnac et al. discloses or suggests the presently claimed invention. The claims, which have been revised, in part, in view of the Examiner's comments, are submitted to be patentable over the cited art. Withdrawal of the Section 102 rejection over WO 01/07568 "as evidenced by" Carnac et al. is requested.

The Section 102 rejection of claims 1-5, 8, 11-17 and 19-23 over U.S. Patent No. 6,207,451 "as evidenced by" Carnac et al. is traversed. Reconsideration and withdrawal of the rejection are requested in view of the above and the following distinguishing comments.

U.S. Patent No. 6,207,451 discloses a mammalian muscle construct, comprising a substrate; at least two separate anchors secured to the substrate in spaced relationship; and myogenic precursor cells provided on the substrate in the absence of a synthetic matrix, wherein at least some of the cells are in contact with the anchors, the cells having been cultured in vitro under conditions to allow the cells to become confluent between the anchors, wherein the anchors are receptive to the cells to attach thereto while permitting the cells to detach from the substrate, such that placement of the anchors controls the size and shape of the resulting three-dimensional muscle construct formed. However, U.S. Patent No. 6,207,451 does not disclose a three-dimensional structure applicable to heart, comprising a cell derived from a part other than myocardium of an adult, which comprises a cell sheet having biological connection without scaffold. Neither U.S. Patent No. 6,207,451 nor U.S. Patent No. 6,207,451 "as evidenced by" Carnac et al. discloses or suggest the presently claimed invention. Withdrawal of the Section 102 rejection is requested.

The claims are submitted to be in condition for allowance and a Notice to that effect is requested. The Examiner is requested to contact the undersigned, preferably by telephone, in the event anything further is required.

MATSUDA
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Respectfully submitted,

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